

MINING RECORD OFFICE, No. 5, SHORTER'S COURT, THROUGHTON STREET, CITY—MR. HENRY KNIGHT, from the
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CONSOLIDATED TREFOIL MINING COMPANY.—At the
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official returns, and confining ourselves to the Cornwall Ticketing
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As further evidence, we extract the following from "DAVEY'S
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This would apply to the respective sales of ore on the 1st of Fe-
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Which will accord with the quoted produce and standard of the
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As the figures adduced will doubtless lead to some correspond-
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Ever another ten days elapse, the Livery of London will be called
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The office of chief magistrate of the city of London should, it is
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We are aware that the learned alderman relies more upon the
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SALES OF COPPER ORES AT SWANSEA.
FROM 30TH JUNE, 1843, TO 30TH JUNE, 1844.

FOREIGN.	Tons.	Amount.	Average price.
Cuba	17573	£231,327 3 6	£13 3 3
Chili	9266	194,979 7 0	21 5 7
Hastings	9152	136,769 8 0	14 8 18
Cuba	4192	57,443 4 6	21 6 4
Valparaiso	1923	34,050 19 0	22 7 3
San Jose	1437	32,315 8 0	29 11 6
Copago	1323	33,736 10 0	17 15 8
St. San Fernando	363	4,061 1 6	14 7 0
Buenos Aires	345	3,808 11 6	11 1 0
Seville	42	283 10 0	6 15 0
Peruvia	20	361 14 0	13 1 8
Mexico	37	136 2 0	4 5 6
Australia	37	144 9 0	3 7 0
America	11	143 6 0	13 0 6
Libertad	3	43 0 0	21 10 0
Total	44164	£730,954 14 0	£16 14 9

IRELAND.

Counties.	Tons.	Amount.	Average price.
Kinchmahon	9381	£67,318 19 0	£7 3 11
Down	4741	37,615 0 0	7 15 8
Ballymurtagh	3314	11,437 10 3	3 9 0
Crossnacree	880	4,061 7 0	4 13 6
Cochran	445	2,436 1 6	5 10 3
Lackamore	312	3,000 4 6	9 6 6
Tigroon	266	1,769 8 6	6 6 11
Concorro	112	1,180 11 0	10 10 9
Dunrobin	97	331 4 0	3 5 4
Belmont	77	157 0 6	2 0 9
Ballyshannon	34	102 17 0	3 0 0
Lough Shanny	18	70 4 0	3 18 0
Roaring Water	14	62 10 0	4 17 0
Wexford	19	30 10 0	2 1 0
Total	19682	£138,607 4 3	£7 10 6

WALES.

Counties.	Tons.	Amount.	Average price.
Llanidloes	998	£7,436 10 6	£7 10 4
Aberdare	67	599 13 6	8 16 11
Llanidloes	33	567 16 6	15 7 9
Hydau	37	73 17 0	2 1 0
Nantau	12	56 14 0	4 14 0
Hydau	4	11 4 0	2 16 0
Total	1141	£8,672 15 6	£7 13 0

SUNDRIES.

Counties.	Tons.	Amount.	Average price.
British Regulus	256	£4,450 0 6	£17 7 8
Laroy	111	456 11 0	4 4 1
Gloucestershire	13	317 3 0	16 14 0
Viney Digg	77	164 12 0	2 3 0
North Molton	14	149 10 0	10 14 0
Hayle	45	129 7 6	2 17 0
Malden	15	121 14 0	8 3 3
Falmouth	13	87 6 0	7 5 0
Bristol	5	66 5 0	17 4 0
Decoyport Slag	93	41 13 0	1 16 9
Total	571	£5,714 13 0	£10 0 1

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ORIGINAL CORRESPONDENCE.

ON THE BAR-IRON AND RAIL TRADE OF SOUTH WALES.

Elton de durs et Williams ferre. — Ovid Met.

SIR.—The "eccentricities" of the iron market must be a matter of astonishment to the uninitiated, for again has the confidence of parties in a stable revival of prices given way in the crisis of an unexpected trial. Though there is evidently a strong feeling that the forthcoming year will put this important trade upon a firmer basis, yet it does not appear sufficiently decided or general to have the influence it ought on the transactions of the approaching autumn. Ill-omened appearances are magnified by obscurity, and undue weight attached to matters of only temporary bad fortune. I shall endeavour in the following remarks to point out the immediate cause of the present state of our trade, and, as correctly as the case will admit, to give an exposition of our future hopes and prospects. A due regard to the value of your space will compel me to condense my statements, so that the deductions may not always be clear; my object will, however, be answered, by giving simply a general view, without explicit details or close statistical accuracy; and, from the general want of knowledge I have met with on the subject, I believe that even this incomplete information will be acceptable to many of your subscribers.

When, in the commencement of the spring, the conviction had become fixed in the minds of all—from the general wants of revived commerce and manufactures, the unusual demand for railroads, and the acknowledged losses of the makers at current rates—that the price of iron must soon rise considerably, purchasers were speedily found eager to anticipate the improvement in the market. The makers, subdued by the long consideration of lower rates, grasped with alacrity offers at a trifling advance, and their books generally were heavily filled at prices which have since appeared almost incredible. Indeed, also, by the depressed value of iron, the merchants themselves, as well as the ironmasters, increased their stocks of bar during the winter, as far as their means, or other prudential considerations, would admit; and it has been the large encroachment on these old stocks, added to the extensive lots of speculative iron, bought up early in the year, and lately thrown on the market, that has chiefly supplied the bar-iron demand, and caused the appearance of an excessive present make—withstanding an actual decrease in the production of that description of iron, and increased activity in the foreign and home consumption. This fact of the stocks being laid in extensively at very low rates, rendered the merchants subsequently less disinclined to admit of a reduction from the higher rates, in the competition for common bar orders, as a good profit would still be left. This facility of abatement caused a distrust of fixed prices in the market, and the anomaly that the value of the merchants were frequently effected at a much lower rate than they could actually, from time to time, purchase at from the ironmasters. Some of the speculative lots were held on as long as possible, in hopes that prices would be still more remunerative; a little dalance, however, in the market, disturbed the equilibrium of the holders, and sales were forced at a most injudicious crisis, and in an almost reckless manner. Scarcely was one lot taken into consumption, when another (like Banquo's ghosts) appeared, and, by their successive assaults at a critical time, the stability of the market at length gave way, and a "crisis *qui perit*" cry was raised. To add to the panic, paper opinions, apparently of authority, began to be propagated, that the improvement in the iron trade was based upon imaginary grounds. Now, it is notorious, that since the winter the stocks of the Welsh iron makers have been greatly reduced; it is known, too, that the Liverpool—and, probably, the London—houses hold far less bar-iron than at that period, and also that large quantities have been purchased from speculators, and gone into consumption. Possibly, from these sources, one third of our whole export of common bars for the past five months has been derived.

The make of iron in Wales has been remarkably equable in quantity, and the average annual make for the past five years shows a singular steadiness, considering the fluctuations of price, and other disturbing causes. At low prices, the production is pushed to the utmost, to economize the cost, and diminish the charge per ton. At higher rates, the difficulty of procuring skilled workmen, especially in the forge department, the long time and outlay necessary in providing new mineral openings, and a disinclination to incur heavy expenditure in extensions, when the prospects of the iron trade are so undimmed, and the consideration of the number of years it would require to reimburse them at a reasonable profit, are generally against the material increase of establishments. Had the Welsh iron-works of late years been only partially employed, the prospects of the bar and rail trade would not be quite so encouraging, but I consider that no very material increase can take place in the production, without the erection of new works. I think the experience of past years is an effective guarantee against this—at all events, the joint stock companies have been sufficiently leant to prevent the attention of new ones to this quarter.

The Welsh production of iron during last year being about an average, home consumption of bars having been lessened by general economic activity, and the demand for British railroads being inconsiderable, a large surplus accumulated, as before alluded to, in the hands of the merchants and manufacturers, and has been applied to the general wants of the current year. The purchases of speculators being chiefly paid for by six months' paper, and taking place nearly simultaneously, were obliged to be disposed of nearly at the same period, to meet the bills becoming due. The ironmasters themselves, occupied chiefly with rails or former orders, have been almost passive during the recent changes, and have generally disinterestedly acquiesced in the reductions in price; some undue eagerness, however, to secure rail contracts open to public competition, may have given rise to the impression that their confidence has wavered.

The supply of bars, short as it has already been from the makers, is likely to be still further reduced, and will, I anticipate, be soon brought to such a point, so that, upon any extensive demand for recurring stocks, spring expectations, or speculation, the scale-bears of prices will be held in the hands of the ironmasters. Several of the larger Welsh manufacturers are engaged almost entirely on rails, and the smaller ones to a great extent; one of the largest, and not hitherto accustomed to this branch of the trade, is proposing to engage in it extensively. It is scarcely necessary to add, that the make of bar-iron will be displaced, according to the unusual extent of this production of rails—or, correctly speaking, at least one-eighth more, from the extra waste in this latter manufacture.

The whole make of the common bar and rails in Wales (judging from past statistics, and allowing from local knowledge for alterations), including the rails of Staffordshire, and the comparatively small proportion of common bars and rails of Scotland, may be estimated at about 250,000 tons. This is strictly common bar and rails, excluding (because it gives a clearer and less complicated view) the consideration of plates, hoops, best iron, and rails, &c., which are, in fact, a separate trade, and influenced by distinct causes from the one under consideration.

According to a rough estimate, from various sources, of the quantities of rails likely to be required shortly for ourselves and other nations, based upon the railroads already decided on or projected:—

	Wales.	Great Britain.	France.
Great Britain and Ireland—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Wales—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
France—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Germany—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Spain—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Portugal—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Italy—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Sweden—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Norway—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Denmark—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Prussia—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Austria—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Hungary—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Poland—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Russia—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Sweden—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Norway—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Denmark—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Prussia—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Austria—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Hungary—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Poland—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000
Russia—Railroads applied for last session, or projects now before the public, given.	10000	10000	10000

It is not inexpressible, too, that before many years have elapsed, the other northern and central States of Europe, the Italian Governments, and possibly the Republics of Spain and Portugal, may choose to join in the general program. Some of the railroads have commenced under the hand of Britain, may, perhaps, for the present, be deferred; new ones, however, are every day put forth, and we may anticipate, that long ere this formidable list shall have been completed one equally large may be completed. The field of Ireland is barely touched, and scarcely more than the large arteries of the kingdom are as yet provided; the Russian themselves, whose tracks we have recently followed, in an age of anti-barbarism, and in their latest survey of the country, had provided an extensive thoroughfare. When the smaller channels and veins begin to extend, and the lines of short communication, through a district of inland, or strictly agricultural, waters, shall be found to answer, the quantity required will be astonishing. England alone is estimated by 25,000 miles of main trunk-line roads, besides nearly 100,000 miles of other high-ways, and independent of Scotland and Ireland. The amount consumed for Russian railroads is estimated at 100,000 tons; but I believe much understated. We have already had a forecast of the amount of Russian coal exports, and a statistical authority of some published this year, estimates:—"Even Russia, which has made a small

beginning in railway construction, is now engaged in carrying out similar projects of a gigantic character, far exceeding anything hitherto accomplished in Europe." One railroad alone is said to be 1000 miles, and the returns of innumerable canals and rivers traversing this vast empire, has, in a measure, pioneered the way for their introduction, and exhibited the practicability of the country for this grand engine of civilization and improvement. Russia herself is not in a position to furnish these rails, and our favourable commercial relations with her seem to insure us this supply. The balance of trade with this country is so much in favour of Russia, that were all these rails supplied there in one year, it would not restore the level. We already participate largely in the American demand for rail iron, with every prospect of a considerable increase. Parties are there so evenly balanced, that a slight additional leaning to liberality would succeed in carrying a reduction of their tariff on iron in our favour. The Zollverein States have now given an extensive contract for rails, and are likely, from their increased wants, to become still larger customers. It is scarcely probable that for some years any practicable extension of their works will do more than supply a proportion of their rails, and the very great concomitant demand for chairs and wrought and cast-iron for all the connections of their roads. Hitherto, with a trifling exception, we have furnished none of the French rails; any demand from them will, therefore, be a new outlet. It is stated, on good authority, that their iron-works have not the facilities of great or early extension, and their main dependence upon charcoal—upon the cutting of the wood for which limits are frequently imposed by their Government—is a formidable obstacle. Lines of considerable length are already commenced in France, and rapidity of construction will undoubtedly be urged, when the returns are so remunerative as these speculations have hitherto proved there.

The relative proportion of rails and bars made at the Welsh works can, to a notable extent, be varied, according to the requisitions of the market. I have reason to believe, that out of the total make of common bars and rails of the kingdom, 170,000 tons of rails would leave the market very barely supplied with bars. The make of rails, at this moment, is in a greater ratio—almost exclusively, however, for foreign orders, sufficient time not having as yet elapsed, with a few exceptions, for the directors of the new English railways to come into the market. The production before assumed of 350,000 tons, I find, on comparison, to be about 25,000 tons, or 7 per cent. on the annual average make of the last five years of similar iron. My estimate has been mainly compiled from the details of the works, but I conceive it to be corroborated in total by the increase being such as might have been reasonably anticipated.

[We regret being compelled to divide the interesting communication of our intelligent correspondent, from whom we hope to hear frequently. The concluding part of the paper shall be given in our next week's Journal.]

THE MINING INTEREST.

SIR.—Observing in your last Number that you are about to resume your strictures on the smelters' monopoly, I beg to hand you some remarks which may guide you, and throw some light on the subject, while I feel assured that other correspondents more able than myself, and having more time to devote to the matter, will aid you in the exposure, which cannot but be productive of benefit to the miner, if it be able to place him in a position whereby he may account for a reduction in the returns—and, consequently, a diminution in his dividends, or an increase on the calls made, should the mine unfortunately not be in a position to divide.

Until about 1812, it will be found, the returning charges (as they are termed) were 2s. 10s. upon every ton of ore, but about that time, owing to the high freight and insurance, occasioned by the numerous captures by the French privateers, and the high price of coal and labour, the smelters complained that 20s. per ton was not adequate to the expense of converting the ore into metal, and thus 2s. was added—making the returning charge 2s. 12s. upon every ton of ore, whether rich or poor, and which is continued to the present day. Upwards of twenty years ago, I made a calculation that 20s. per ton would cover all reasonable returning charges, in consequence of the altered circumstances of the times, occasioned by the peace, and thus that the smelters were actually deriving a profit upon the returning charge alone of 1s. 2s. per ton of ore, whether purchased at 11s. or 10s. per ton (and this I find confirmed by the data afforded in your Journal about the time of the introduction of the tariff)—thus causing the frequent, and sometimes tremendous, discrepancies between the quoted standard upon a high or low average produce, all competing for the poorer ore, which afforded such handsome profit, with a moderate employment of capital, whilst the rich and powerful companies could obtain the ore of high produce upon very advantageous terms. The difference to which you refer in the two columns, which you term only as an approximation, will, I think, be fairly borne out, if we take into consideration that the smelters insist upon 21 cwt. to the ton of ore, while that of metal is 20 cwt.—thus making a difference of 12 cwt. to 13 cwt. of ore in every ton of metal. It is also to be remembered, that in refining their samples, they almost burn the copper, and it is upon each result their traders are founded—moreover, disregarding in their calculations all the fractional parts below one-eighth upon every parcel, together with the "lat" (as it is termed) upon every barrow of ore weighed; add to these the facilities and economy observed at the present time in smelting their ore, and I feel assured that a saving or profit is effected of at least 15 per cent. It is, I believe, generally considered that 1s. 2s. would now cover the whole of the returning charges, in consequence of the reduction in the rates of freight and carriage from the different mines, and decreased consumption of coal in the process of smelting—while I may observe, that the copper and an output of common ore is not so pure as their assays in buying by 12 to 15 per cent. I have endeavoured to throw together these crude ideas as bearing on the subject, and shall be happy, when time admits, to afford you or your readers any information in my power.

Bedford, Sept. 18.

A CORRESPONDENT.

BLAENAVON IRON AND COAL COMPANY.

SIR.—I should fear that the letter of "A Looker-on," in your Number of the 14th instant, though written, I doubt not, with good intentions, is calculated to raise unwelcome expectations in the minds of the shareholders in this concern. The writer seems to forget that at the period when the report in which he alludes was laid before them—viz., the end of April—one-third of the current year had elapsed without any advance upon the last year's prices having been realized; and that he seems to be aware how little the then anticipated improvement in prices appears likely to be fulfilled. As respects the new works, the "Looker-on" forgets that considerable sums must be expended before they can be set in operation—implying, of course, additional payments for interest, &c., on the capital required for the purpose. It certainly does appear for the interest of all concerned, that these works should be completed; this, however, is not the point to which I would now address myself—but rather to guard shareholders from entertaining the golden views of the "Looker-on," which the aspect of the times appears to me so little likely to enable them to maintain for a moment.

Bedford, Sept. 18.

A BLAENAVON.

BLAENAVON IRON AND COAL COMPANY.

SIR.—As a shareholder in the Blaenavon Company, I was much pleased with the letter of "A Looker-on," which appeared in your Journal of the 14th inst., meeting, as it does in great measure, the view I have myself taken of Blaenavon affairs. What this company wants to lift it from its torpid state is spiritual and judicious management—spirit there is none in it, and I fear little second judgment, but the purport of my letter is not to find fault with those at the helm, whose aim is to be found, as I believe our directors are worthy and true men, and intend what is right, but to show that their efforts have hitherto been unavailing. According to the directors' own statements, there has been 70,000 tons expended on the new works, and what benefit do we get therefrom? Does from this—why, nothing, save the pleasure of paying 5 per cent. per annum for the money; and, according also to the directors' own showing, no one year since the company was formed, has pig-iron been made at a loss on the actual cost per ton, but every year, even at the worst, has it been made with a profit; why, therefore, the three new furnaces which have been built up to the top, with a splendid engine and boilers ready, also pits, &c., need to furnish materials, should contain also, to be so a capital I cannot follow. I have been informed that, according to recent estimates, these three furnaces may be put in blast for an outlay of between 15,000 and 20,000; say 20,000—plus, together with the 70,000, already expended, would make, say, in round numbers, 100,000. At the present price of iron I look upon it that 25 per cent profit at least could be realized from these furnaces (no iron would be made cheaper than at the old ones), and would make at least 25,000 tons per annum, which would show at the present price 12,500, but say 20,000, not to mention things; this would be

realising to an unfortunate shareholder 10 per cent.—yes, 10 per cent.—upon our present outlay of 70,000, for which very money we now have to pay 5 per cent.—making a difference to us of 11,000 per annum. But the directors will say—"we shall not be able to sell the iron"—to this my reply is, with proper management you may as easily sell the produce of ten furnaces as five—that is, with a more trifling additional expense. Nothing wants altering so much at Blaenavon as the sales of iron, because nothing is so miserably managed; as a proof of my assertion, the Blaenavon Company, with only four furnaces, have been holding larger stocks than those ironmasters who have been making three and four times the quantity, and I am informed that this company, at the present moment, holds larger stocks than any other in South Wales. The cry of our directors for the last five years has been—"we must not increase our make, we shall never sell the iron!" I would ask them how many 100,000 tons have been made by other works, begun since our new furnaces were begun, and sold at a profit. In my opinion the three new furnaces should be put in blast with all convenient dispatch, and I am convinced that with spirited management and an efficient system in the sales department, the Blaenavon property would become one of the most flourishing concerns in South Wales. —*Aberystwyth, Sept. 19.*

THE ATMOSPHERIC RAILWAY—ROBERTS'S IMPROVEMENTS.

SIR.—At the present moment of Cornish enterprise, any calculation with an object to promote the perfection of railway information may probably obtain a place in your columns; also, as a knowledge of the atmospheric principle is the least in advance, one may be permitted to make any remark having the appearance of truth.

I felt anxious for the success of an experiment on foot at our late Polytechnic Exhibition in Cornwall, on Mr. Roberts's valve, to test the amount of its leakage, and the rapidity by which the vacuum was to be thereby destroyed. Exhaustion being made for this purpose, the mercury was observed to fall by equal spaces in equal times, which it would seem was an effect different from what was anticipated, it being more reasonable, on the first thought, that the fall should diminish with the difference of the external and internal pressures. The following, however, is offered as a solution:—The quantity of air admitted by the pores or crevices of such a valve is in the ratio of their sizes, and those sizes are necessarily enlarged as the difference of pressure diminishes, so as to admit always equal quantities in equal times; if this be right, the experiment furnishes an element in atmospheric practice which may be well borne in mind.

In the next place, I have, and that principally, to touch upon the unfairness of this experiment on the miniature, which cannot be allowed to represent the working size in any other respect than its linear proportions, the relation being as one to twelve, or thereabout. The small valve being of half-inch flexible tube, containing triangular prism or verbiage of lead, the weights of which were to tighten or close it wedge-wise along the opening. If we conceive a cross section of this model, we have the piston enclosed, or nearly so, by the cylinder, and the lead enclosed by the proposed packing material; then, supposing one inch in length of this miniature lead to weigh an ounce, we know that lead of the same length, but twelve times the size, would weigh as the ounce, and give 144 oz.; then, the bearing on each side in the model might be half an inch, but in full size six inches—on the both sides together, one inch and twelve inches; we have, then, in each case, comparative pressure—1 oz. divided by 1 in., giving one ounce per inch to close the smaller valve, and 144 oz. divided by 12 in., giving twelve ounces as great a pressure per inch to close the larger; further, a joint of six inches is twelve times less liable to admit air by casual inequality than one of half an inch—the first twelve, then, multiplied by this, gives 144; lastly, with the model we have a diameter of piston one inch and a half, that of the larger being eighteen inches, and it must be seen that injury to the vacuum by leakage would lessen as the capacity increased—thus, then, the two contents for one inch in length, as before, are as the square of the diameters, the one being 144 times that of the other; this multiplied by the preceding 144 gives 20,736—so that the evil of leakage on a working scale would be 20,736 times less than it might prove to be with the model in question; hence the unfairness as far as the weights of the valves are concerned in closing them. If we consider separately the action of the atmosphere to close the valves, it will be thus:—Supposing 4 lbs. per inch be exerted on the smaller and larger valves; half-inch width of bearing gives 2 lbs. for an inch in length, while six inches wide gives 24 lbs.—then, the halves in 2 are 4, and stars in 24 are 4, showing thus far an advantage for the larger; but leakage here, as in the former case, being for the larger twelve times less, and the capacity 144 times more, we have 1728 to 1 in favour of the larger—it thus appears that the separate or simultaneous action of the atmosphere and lead being considered, the result is infinitely in favour of the larger scale. It is well established, that small steam-engines are not so efficient as large ones, and it is, for reasons analogous to the above, impossible that they can be.

With your permission, in an early subsequent Number, I will dwell a little on the experiment on wood rails.

JOHN PEARSON.

Exeter, Sept. 16.

P.S.—Will Mr. Benjamin Hiram be so good as place a longitudinal section of his air-machine in the Editor's possession, for contrast with John Phillips's, which shall be furnished for this purpose; the public will then decide as to the identity of principle and minutiae. J. P. is aware of some publications on the matter coming from Russia, as well.

THE COMPARATIVE POWERS OF THE NORTHERN AND SOUTHERN LOCOMOTIVES.

SIR.—In your Journal of the 7th instant you gave a paragraph headed "Locomotive Power," and telling fearfully against the economical application of that power as exemplified in the southern line, where brought into comparison with the northern. This is said to result from the use of Gray's patent in the north. I can only say it may be so; but, if this really is the case, certainly the southern locomotives are not "wide awake." Let the cause be what it may, this is a matter that requires investigation, and it would be as little to your credit to let the question go by unadvised, as it is to your credit to have brought it prominently forward. The fall and satisfactory solving of this matter is a thing that would be likely to contribute, in no small degree, to advance the prosperity of the southern railways.—*Exeter, Sept. 17.*

X. Y. Z.

RAILWAYS—WHAT IS DOING, AND WHAT OUGHT TO BE DONE.

SIR.—If our railway system continues extending for two or three more sessions of Parliament, after the same ratio in which it has been extended during the last, in a short period there will be scarcely a valley of any fertility in England which will not be traversed by its own line. But while the railways are being so eagerly seized upon by competing companies, it seems to me anomalous that our high table lands and long ridges of hills—the shoulders, the backbone, and ribs of the country—should not have drawn attention. Are they to be excluded from our magnificent railway system? Are they to be as much below the rest of the country in moral position as they are above it in physical? Are they to be left fifty years behind the rest of England?—*Exeter, Sept. 17.*

Common-place people may tell us that railways cannot ascend the hills. That the locomotive cannot, with an ordinary train attached, I admit; but can the atmospheric, in the like predicament, either, unless its pipe be large enough for a man to walk in, and its stationary engine such as the world never yet saw. But these are not the only propensities which I would say, and say it loudly, but the public require, if they lay a railway up or across the hills, whether the locomotive system of propulsion will not drive the train, up, and in a single time, that will make the advocates of the other system look rather surprised.

You tell us the inventor of hydraulic propulsion is an over-going person. What have the public to do with that? He has thought his goods to market, and I suppose they are no sale. Let the advocates of high level lines, to meet the high level districts in England or Wales, or elsewhere, rise either, and time, and if let should return to water (the reasonable course, there would have any pity, as being for any a going person).

Exeter, Sept. 19.

ONE OF THE MANY.

WINDTIGHT PISTON CHUCK STAMP.

SIR.—(Disregarding the amount of the innumerable loss of 100 by accident and gas, which notwithstanding to require a newly discovered one, and London, Ireland, may I beg you to publish the following article, put in fullness, before the railwaying time goes from the bottom of waste, &c., &c., it is a contribution, for the discovery of which the public are indebted to Mr. F. PEARSON, of Manchester:—Take a pit or any other vessel, fill it with water, then throw on much water upon it as it is in a case to begin to bubble, and, when in its most excited state, place it into the machine

change in the seventy fathom level cross-cut, east of great engine-shaft, where we are driving to see the south lode. Hunkles's shaft, at Ventolungue, is sunk sufficiently for an eighteen fathom level; we shall now proceed with a cross-cut south towards the lode, which will be about three fathoms. The two fathom level end west, and as well as the shaft driving on the lode, is much as have been reported for a week or two past.

J. WARR.

FOREIGN MINES.

UNITED MEXICAN MINING ASSOCIATION.

Guatemala, July 26.—I beg leave to refer to the enclosed duplicate of my last letter of the 22d June.

Mine of Rayon.—The improvement experienced in the workings of San Miguel will, it is hoped, in part make up for the deficiency that is likely to be felt in the workings of San Cayetano. The rains have been recently abundant this year; the expenses of drainage have now become very heavy, and, in order to meet the increase of water in the mine, it has been necessary to purchase sixty-two h-hoses, which, in addition, I hope, may prove sufficient to keep the water down to such a level as to prevent any interruption to the interior operations. The price of fuel, fortunately, continues very moderate. The sum of \$13,354 1 3 has been received from the Hacienda family, reducing the general deficit of the mine to \$797,486 3. The result of operations in the hacienda of Rayon, for ores reduced on account of the owners of silver here in the mine, is likely to prove favorable this month, as the produce of two tortas and the sales of the arrastres has already been received.

Quicksilver.—I am in daily expectation of the arrival from Tampico of the sixty bottles sent by the May packet, and have again been placed under the necessity of borrowing thirty-three bottles to be repaid out of the sixty on road from Tampico.

Hacienda of Duran.—The continued rains that have fallen during the last month have very much retarded the operations as regards exterior work. The twenty arrastres are now in order, as is also the mill, but the drawing wells are still incomplete, and until these are finished, no work can be done in the arrastres. As there is a probability of the hacienda being in a state to grind ores in the month of September, the scales have been purchased, and are distributed in the various departments of the hacienda of Rayon and Duran to be broken in.

Amalgams.—A consignment from house to Tampico ought to have towards the end of next month, when I purpose to make a remittance to the court of such funds as can be spared from our ways and means here.

G. A. GLENNIE.

Report on the State of the Workings of the Mine of Rayon.

July 15.—San Cayetano.—The operations in this mine are now principally confined to throwing down the ore from those pillars which can be removed with safety, in consequence of the roof around them having been received by the dry walls raised for the purpose. The old workings of San Cayetano are still yielding a small quantity of ore of the common class. The produce of San Rayon has now ceased, the whole of the ore having apparently been extracted from this lode. From the "barra" of San Rayon this extraction has fallen off as regards the quality of ore, the benches mentioned in the last report having disappeared. In following up the ordinary ore in the end of Arrastres, a communication has been made with the advanced part of an old cross-cut, and although a small portion of the ore is found on the run of the lode, the general appearance is not very encouraging in this working at the present moment. The number of workmen in San Cayetano has been reduced, and at present seventeen pairs are employed by day, and thirteen pair by night; the weekly produce of ore from last report has averaged 300 corgas. In the cross-cut (San Rayon) 1000 yards have been driven during the last five weeks; a band of about three inches broad, with a few specks of ore, has just been cut through, which is the only vein. One that has taken place. In the cross-cut San Valentin, the bench of the lode that was being looked for has been now completely cut through, but it proves to be quite barren of ore in this particular spot—what in other respects its location is exactly similar to the same bench in a camp not far removed from this cross-cut, and in which there is some good ore.

San Miguel.—The end of San Hilario and pit of the same name are producing a considerable quantity of the common class of ore, amongst which some rich veins present themselves occasionally, and the general appearance of the lode has improved since the last report, more particularly in the end. In San Pedro the ore is now found in the roof, and at the present moment a rich band runs across the same; but it must be observed, that these bands are very variable, situated, as this is, in the upper part of the lode. The end of Rayon is being followed up, and yields a small portion of very good ore, chiefly found in benches; and another end (San José) also contributes something towards the general produce of this part of the mine. Twenty pairs of horses are now employed in San Miguel by day, and twenty pairs by night—and the weekly produce of ore has averaged 191 corgas. Besides the above-mentioned extraction of ore from San Cayetano and San Miguel, there has also been a weekly average of ore from the workings of the patio of Santa Rosa, giving a total weekly produce of 166 corgas of ore.

Statement of Produce of Picked Ore, Owing, &c., of the Mine of Rayon, for the five weeks ending 26th, 27th, 28th, 29th, and 30th July, 1864.

	Class picked,	Sanctification	United Co.	Half sale of	Amount of	Excess of
Date.	10 years.	10 years.	10 years.	business cost.	cost.	cost.
	Ch.	Ch.	Ch.	Ch.	Ch.	Ch.
June 10	00	00	00	00	00	00
July 10	00	00	00	00	00	00
Aug 10	00	00	00	00	00	00
Sept 10	00	00	00	00	00	00
Oct 10	00	00	00	00	00	00
Nov 10	00	00	00	00	00	00
Dec 10	00	00	00	00	00	00
Total	0000 00	0000 00	0000 00	0000 00	0000 00	0000 00

* Excess of amount over half sale of business cost, and paid for the excess and

